



National Aeronautics and
Space Administration

2023 NASA SCIENCE

Dr. Stephen Rinehart

Director, Planetary Research Programs

NASA Science Mission Directorate

54th Lunar and Planetary Science Conference

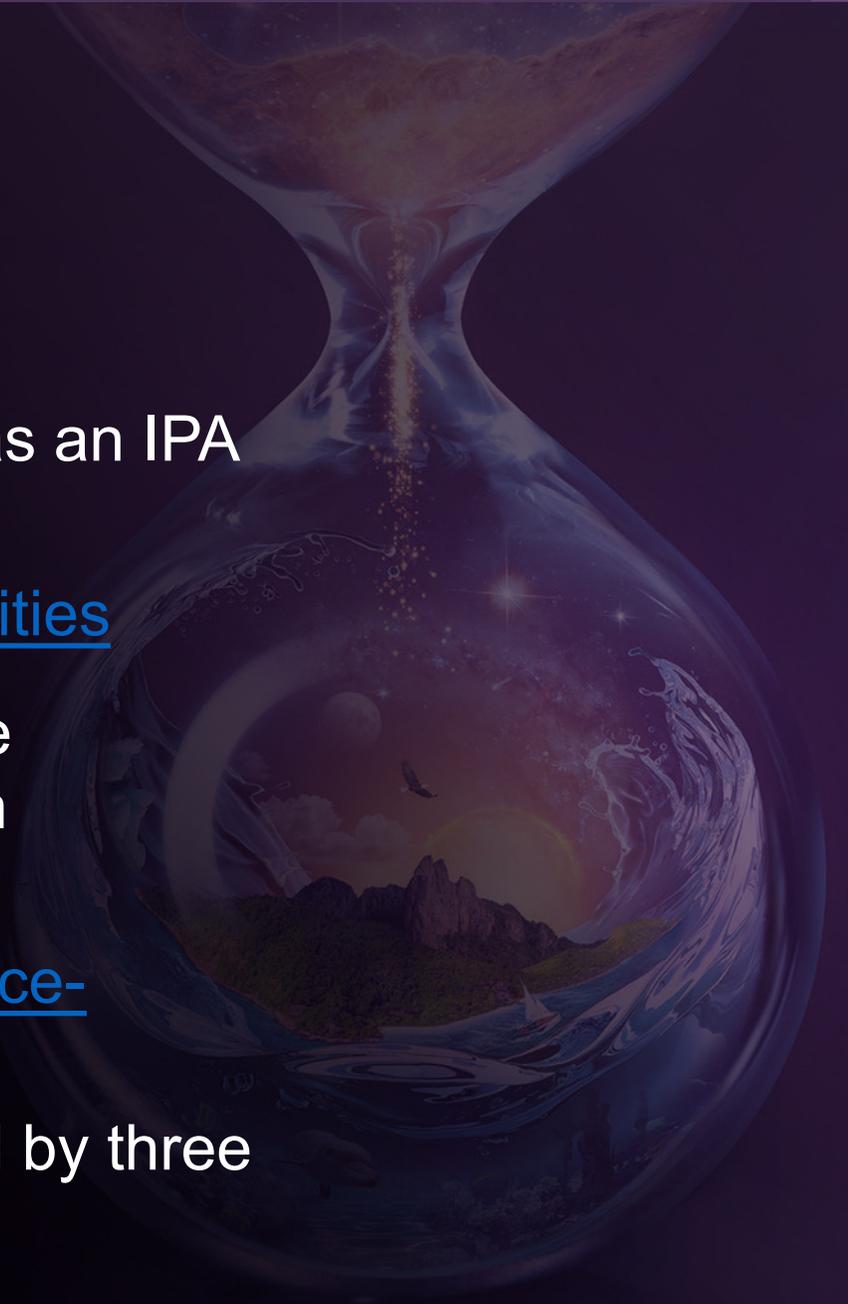
March 16, 2023



Announcements

Two opportunities have been posted:

- Call for people interested in working at HQ either as an IPA or on a detail
 - <https://science.nasa.gov/about-us/job-opportunities>
- Call for nominations for new PAC members. We're particularly interested in members with expertise in habitability and sample science.
 - <https://science.nasa.gov/researchers/nac/science-advisory-committees/pac>
 - Current PAC members' appointments extended by three months. New terms to start on January 1.



Planetary Science Division ROSES 21 Program	Step-1 Due Date	Step-2 Due Date	Panels Held	Selections/Proposals	Selection Dates	Days from Step-2 to Select
Planetary Protection Research	04/12/2021	05/13/2021	Yes	5/10 (50%)	10/15/2021	155
Exoplanets Research Program	04/02/2021	05/27/2021	Yes	22/183 (12%)	10/6/2021	132
Development and Advancement of Lunar Instrumentation	04/16/2021	06/16/2021	Yes	5/44 (11%)	1/21/2022	219
Yearly Opportunities for Research in Planetary Defense	04/22/2021	06/17/2021	Yes	12/23 (52%)	10/19/2021	124
Cassini Data Analysis Program ¹	05/07/2021	07/09/2021	Yes	15/38 (39%)	10/8/2021	92
Hot Operating Temperature Technology	06/01/2021	08/03/2021	Yes	7/38 (18%)	11/12/2021	101
Juno Participating Scientist Program	06/14/2021	08/13/2021	Yes	10/27 (37%)	11/12/2021	91
VIPER Mission Co-Investigator Program	07/02/2021	08/31/2021	Yes	8/50 (16%)	12/21/2021	112
Planetary Science and Technology Through Analog Research	07/23/2021	10/07/2021	Yes	6/49 (12%)	3/30/22	175
New Frontiers Data Analysis Program ¹	09/03/2021	11/04/2021	Yes	7/21 (33%)	1/24/2022	81
Mars Science Laboratory Participating Scientist Program ¹	09/15/2021	11/05/2021	Yes	25/50 (50%)	1/21/2022	77
Mars Data Analysis ¹	09/24/2021	11/18/2021	Yes	20/66 (30%)	5/10/2022	173
Discovery Data Analysis ¹	09/28/2021	11/23/2021	Yes	9/31 (29%)	3/26/2022	107
Planetary Science Early Career Award	N/A	12/08/2021	Yes	5/27 (19%)	4/17/2022	130
Payloads and Research Investigations on the Surface of the Moon		12/20/2021	Yes	2/29 (7%)	6/7/2022	169
Lunar Data Analysis ¹	12/01/2021	02/24/2022	Yes	7/35 (20%)	6/16/2022	112
Martian Moons eXploration Participating Scientist Program	MOVING TO ROSES-22					
Future Investigators in NASA Earth and Space Science and Technology	N/A	02/11/2022	Yes	32/230 (14%)	6/15/2022	124
OSIRIS-REx Sample Analysis Participating Scientist Program		04/26/2022	Yes	8/58 (17%)	8/1/2022	97

1: DAPR Program

Cross-Divisional

Year: MATISSE, ICAR, Habitable Worlds

NoDD programs

We will be reporting NoDD statistics, in general, for the past year. (Data here as of December 2022)

	Program	Total ROSES21-22	Within the Last year					Proposals 5-12 months old			#props in 270 days prior to 10/1/22	# of these notified	50% notification time as of 10/1/22	80% notification time as of 10/1/22	
			Submitted	Pending	Declined	Selected	Selectable	Selection Rate	# Props	Still pending					Older than 12 months
C.2	EW	53	33	6	17	10	0	30%	26	2	0	26	24	127	149
C.3	SSW	117	94	21	46	24	3	26%	75	7	0	73	61	184	274
C.4	PDAR	62	38	10	24	4	0	11%	30	2	3	31	26	133	186
C.5	EXO	89	56	15	24	15	2	27%	41	2	0	36	30	130	188
C.6	SSO	27	19	8	7	4	0	21%	15	4	0	15	9	148	Not achieved
C.12	PICASSO	25	16	2	8	6	0	38%	14	0	0	13	12	157	193
C.16	LARS	16	8	4	2	2	0	25%	6	2	0	7	4	117	Not achieved

Notes:

Selection rates have improved

Proposals are still meeting high standards.

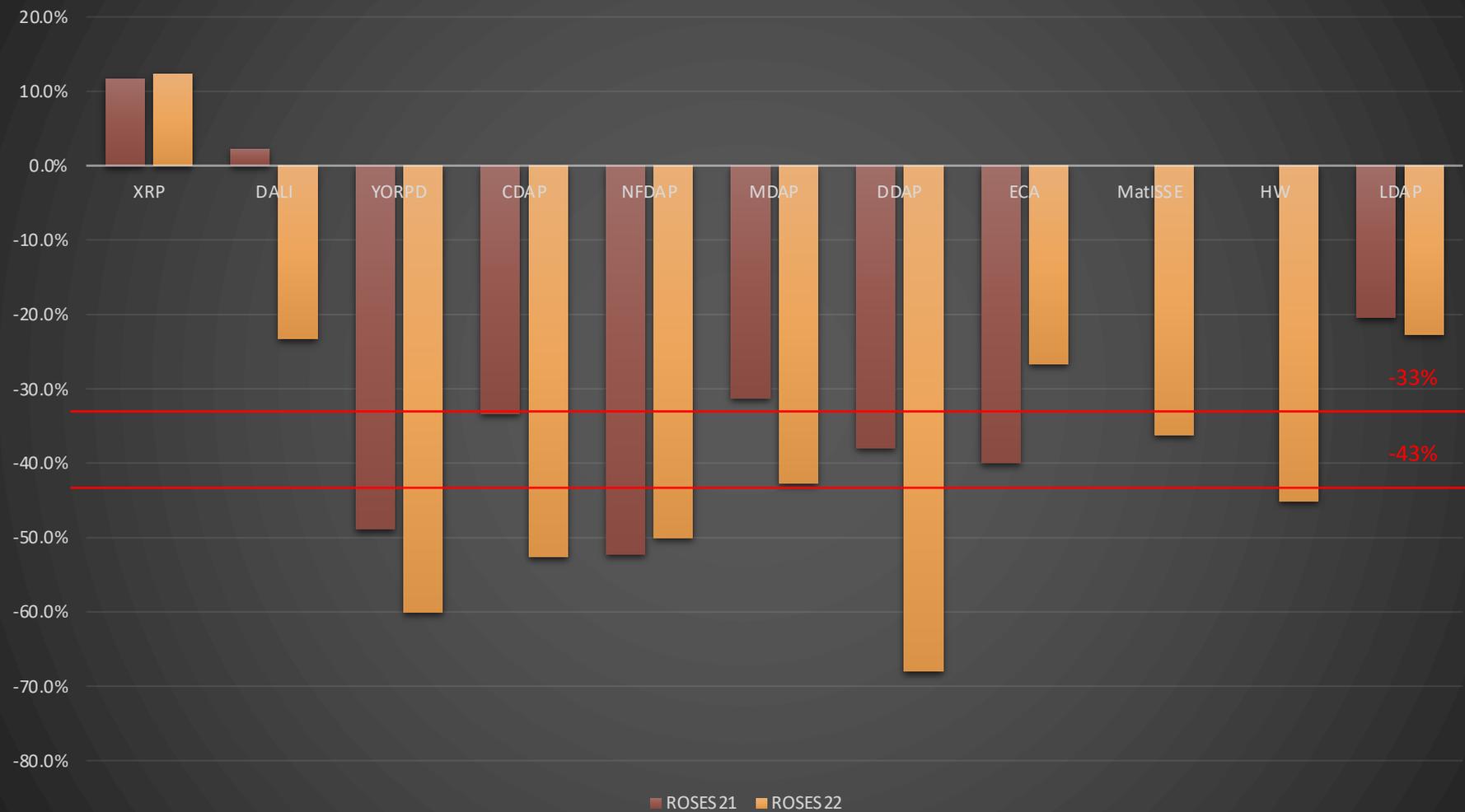
It is taking us too long to get proposals reviewed and notified

But we're getting better!

Planetary Science Division ROSES 22 Programs	Step-1 Due Date	Step-2 Due Date	Panels Held	Selections/Proposals	Selection Dates	Days from Step-2 to Select
Exoplanets Research Program	03/31/2022	05/26/2022	Yes	30/173 (17%)	08/30/2022	96
Maturation of Instruments for Solar System Exploration	04/06/2022	07/14/2022	Yes	5/37 (14%)	10/20/22	98
Planetary Science Enabling Facilities	04/08/2022	06/03/2022	Yes	10/25 (40%)	10/31/22	150
Development and Advancement of Lunar Instrumentation	04/13/2022	06/15/2022	Yes	5/33 (15%)	2/28/22	258
Yearly Opportunities for Research in Planetary Defense	04/21/2022	06/16/2022	Yes	8/17 (47%)	12/2/22	169
Cassini Data Analysis Program ¹	05/05/2022	07/07/2022	Yes	8/27 (30%)	0/26/22	81
Martian Moons eXploration Participating Scientist Program	06/16/2022	08/16/2022	Yes	XX/49	Delayed for coordination with JAXA	
Planetary Protection Research	06/21/2022	07/20/2022	Yes	5/15 (33%)	12/20/22	153
Discovery Data Analysis ¹	09/06/2022	11/01/2022	Yes	XX/16		
New Frontiers Data Analysis Program ¹	09/07/22	11/3/2022	Yes	9/22 (41%)	2/13/23	102
Mars Data Analysis ¹	09/07/2022	11/15/2022	No	XX/55		
Analog Activities to Support Artemis Lunar Operations	N/A	12/06/2022	Yes	13/33 (39%)		
Planetary Science Early Career Award	N/A	12/08/2022	Yes	XX/33		
Apollo Next Generation Sample Analysis Program	10/17/2022	01/19/2023	No	XX/7		
Precursor Science Investigations for Europa	11/01/2022	12/16/2022	No	XX/28	<ul style="list-style-type: none"> Highlighted in Yellow = Cross-Divisional Not solicited in ROSES22: PSTAR 	
Interdisciplinary Consortia for Astrobiology Research	09/15/2022	01/20/2023	No	XX/28		
Habitable Worlds ¹	11/08/2022	02/03/2023	No	XX/39		
Lunar Data Analysis ¹	12/1/2022	02/23/2023	No	XX/34		
Artemis III Geology Team	2/24/23	4/25/23				
Future Investigators in NASA Earth and Space Science and Technology	N/A	2/21/23	No	XX/216		

Proposal Pressure: Update

Percentage Change in Proposal Pressure from ROSES20

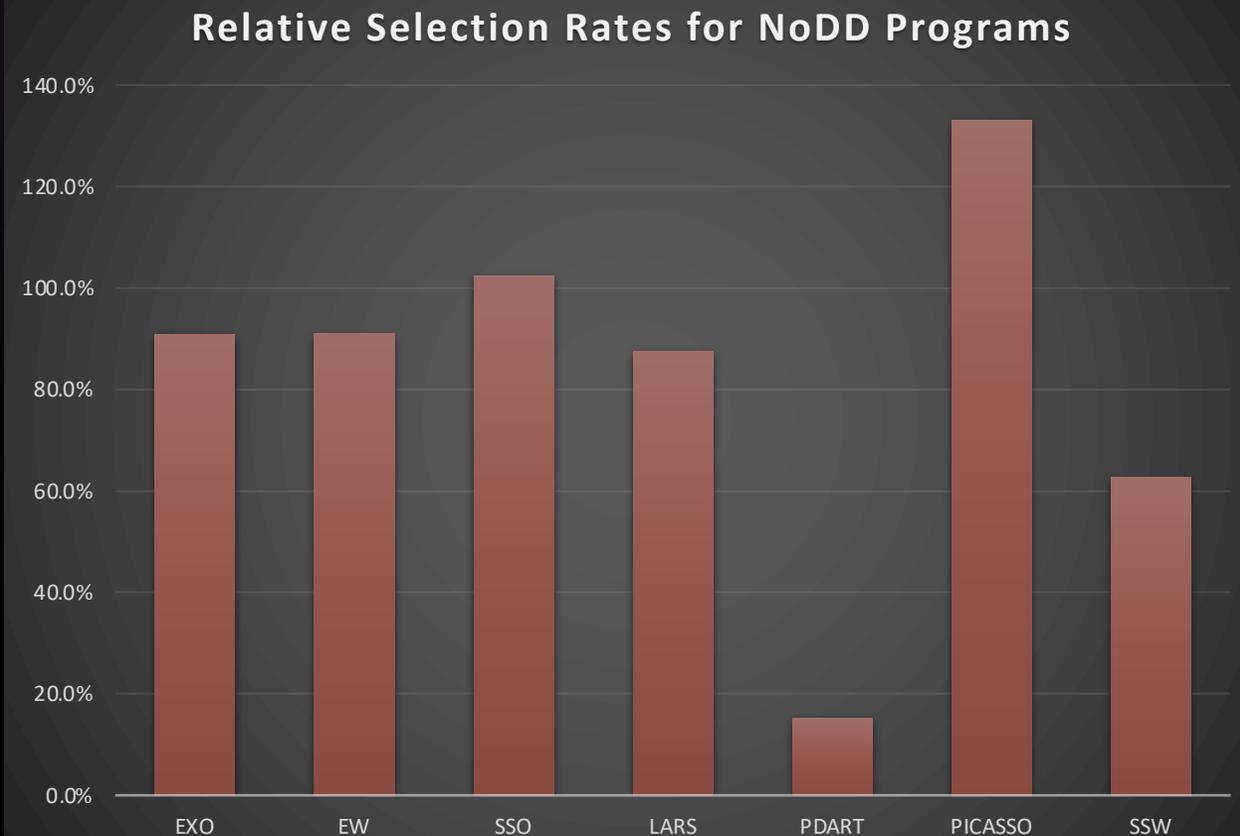
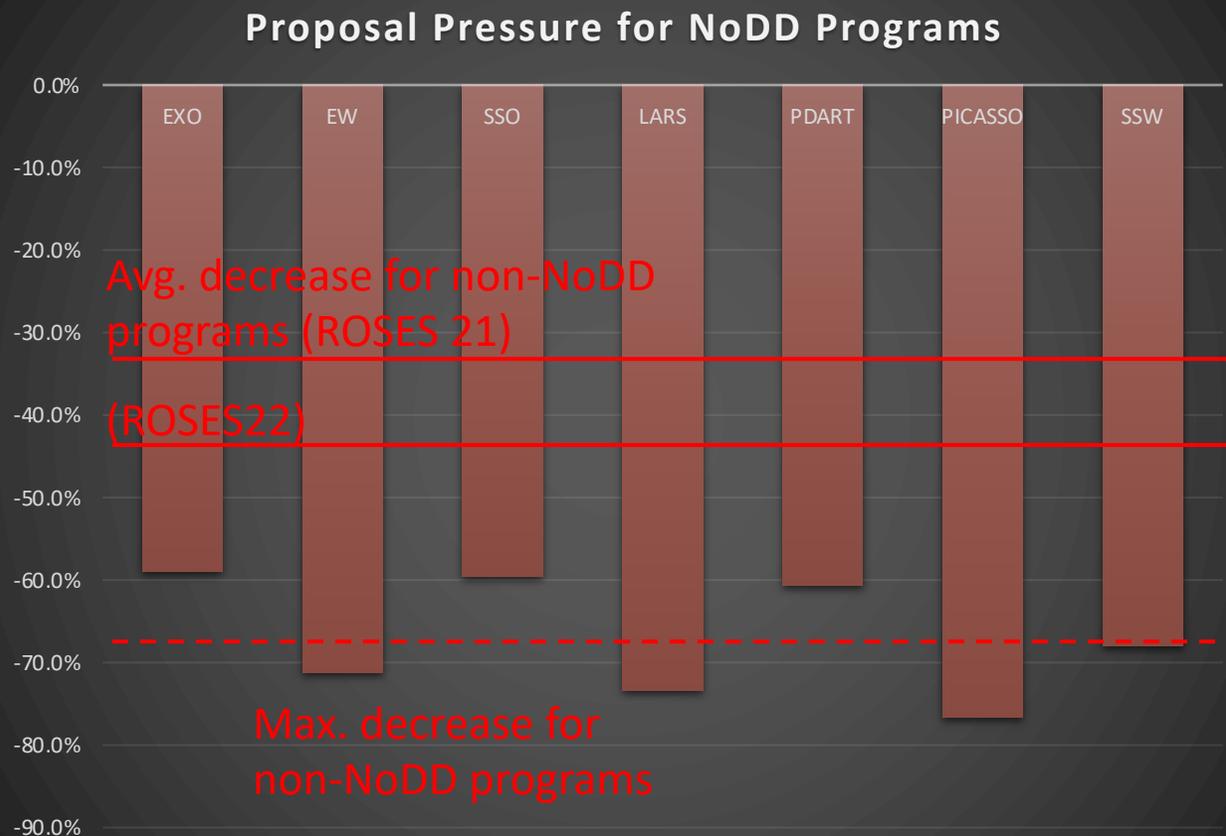


Average drop*
ROSES20 -> ROSES21
ROSES20 -> ROSES22

*: This excludes XRP

Please email me
(Stephen.A.Rinehart@nasa.gov)
and tell me why **you** are not
proposing!

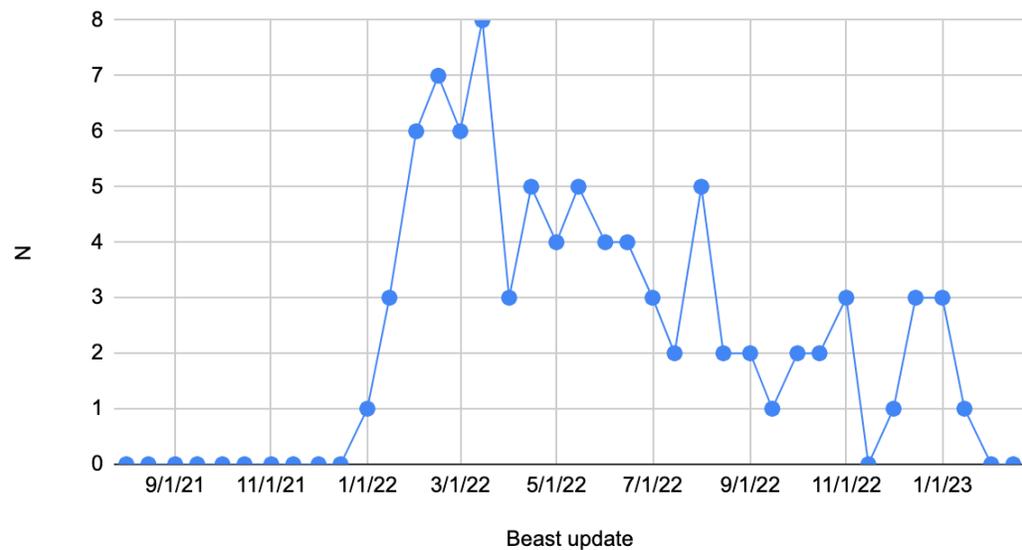
Proposal Pressure in NoDD (ROSES21)



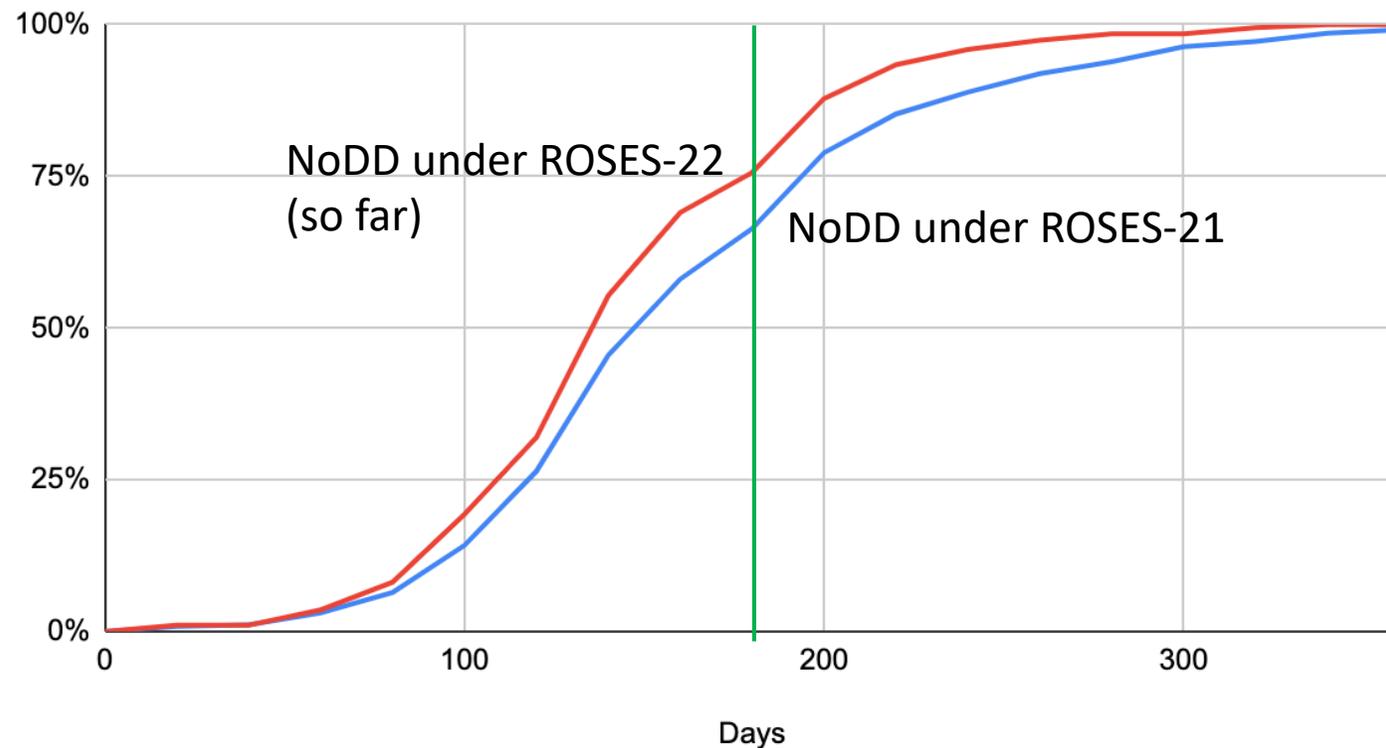
This is the **change** in selection rates relative to ROSES20.

NoDD Time to Notification

Number of proposals pending >270 days



Time to notification (% notified by days)



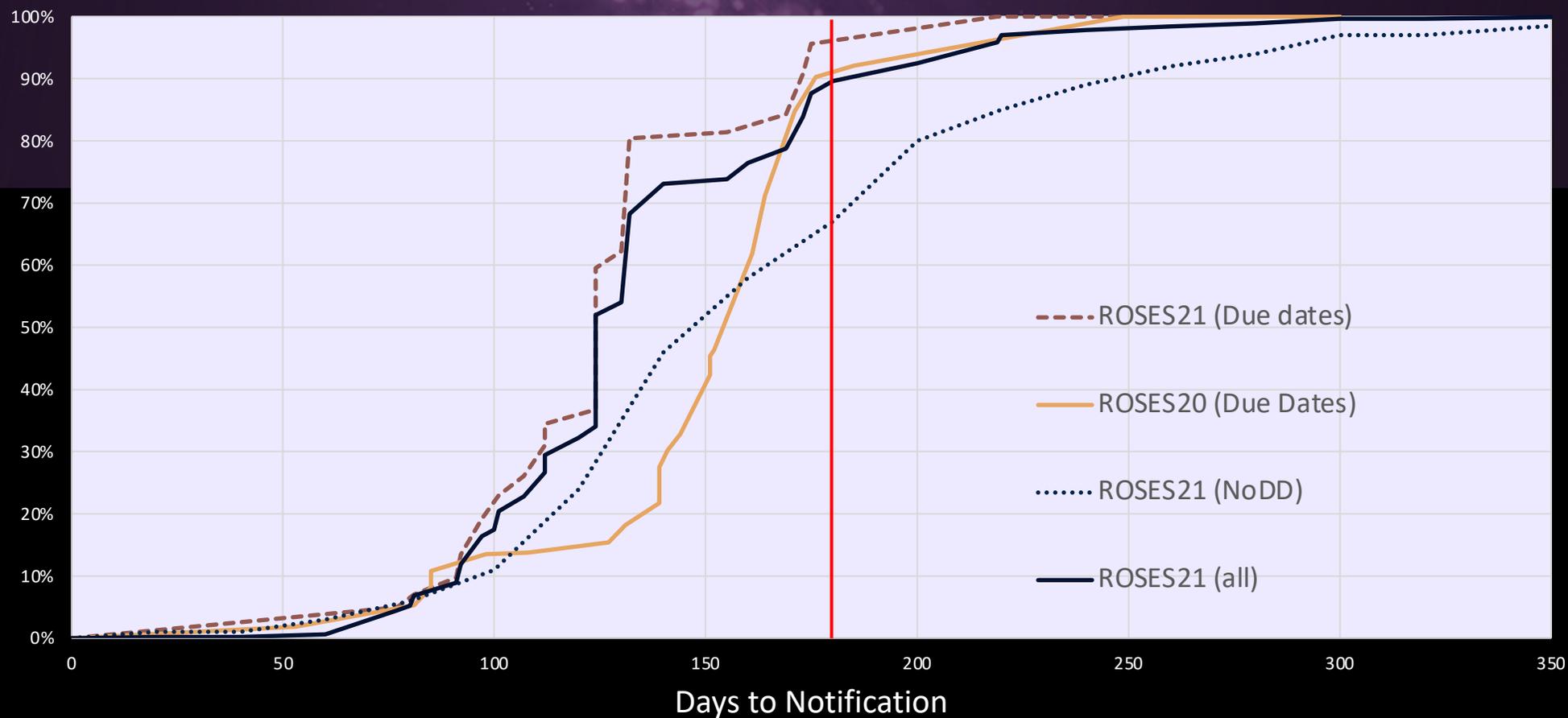
Beginning: some proposals languished while we waited for additional proposals

Now: Time to notification is improving.

Original Goals: 50% of PIs notified in <150 days (at ~136 days now); 90% in <235 days (at ~208 days now).

(Better) Goal: 80% within 180 days – currently at 76%

Time to Notification: pre-NoDD and now



NoDD: Metrics for Success

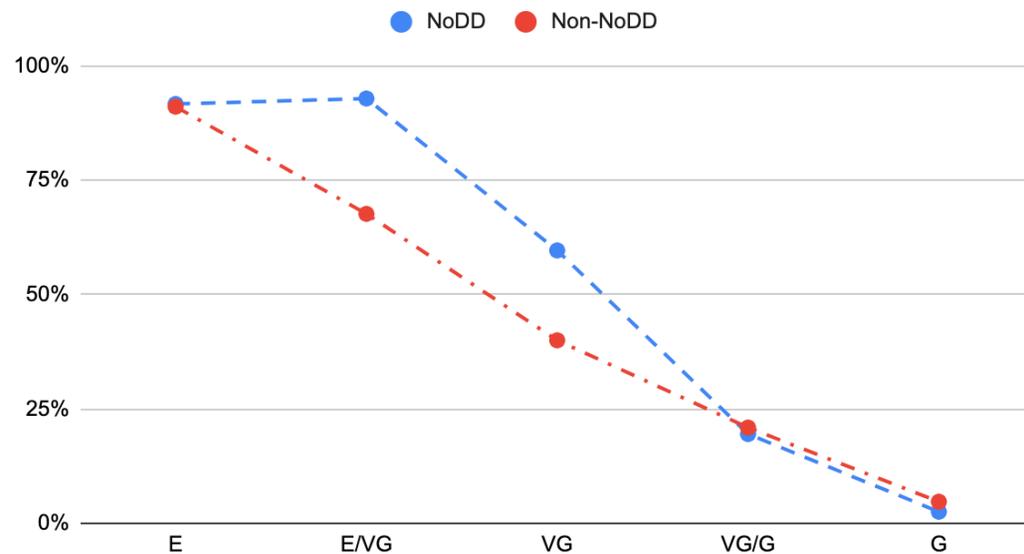
Revised Metrics:

- Dispersion of proposal submission ✓
- Reduced Proposal Pressure ✓
- Time to Notification
- Proposal Quality ✓ (?)

Other factors:

- Community feedback
- PO Feedback
- Alternative models?

Percentage Selected by Grade



Data **suggests** that there is no substantial difference in the quality of selected proposals under NoDD



NoDD: Informal Feedback after 1 year

Community Feedback:

- The majority of feedback from the community has been very positive

Program Officer Feedback:

- NoDD is more work

Concerns:

- Low proposal pressure (but this is true for all programs)
- Time to notification

Reminder: We decided to do a three-year trial of NoDD, and we knew that the first year would be the toughest as everything transitions.

Just-in-time Budgets: Feedback

Reminder: DDAP has done an experiment that only requires proposers to identify a cost “bin” for their proposal – full budgets are only required if a proposal is being considered for selection

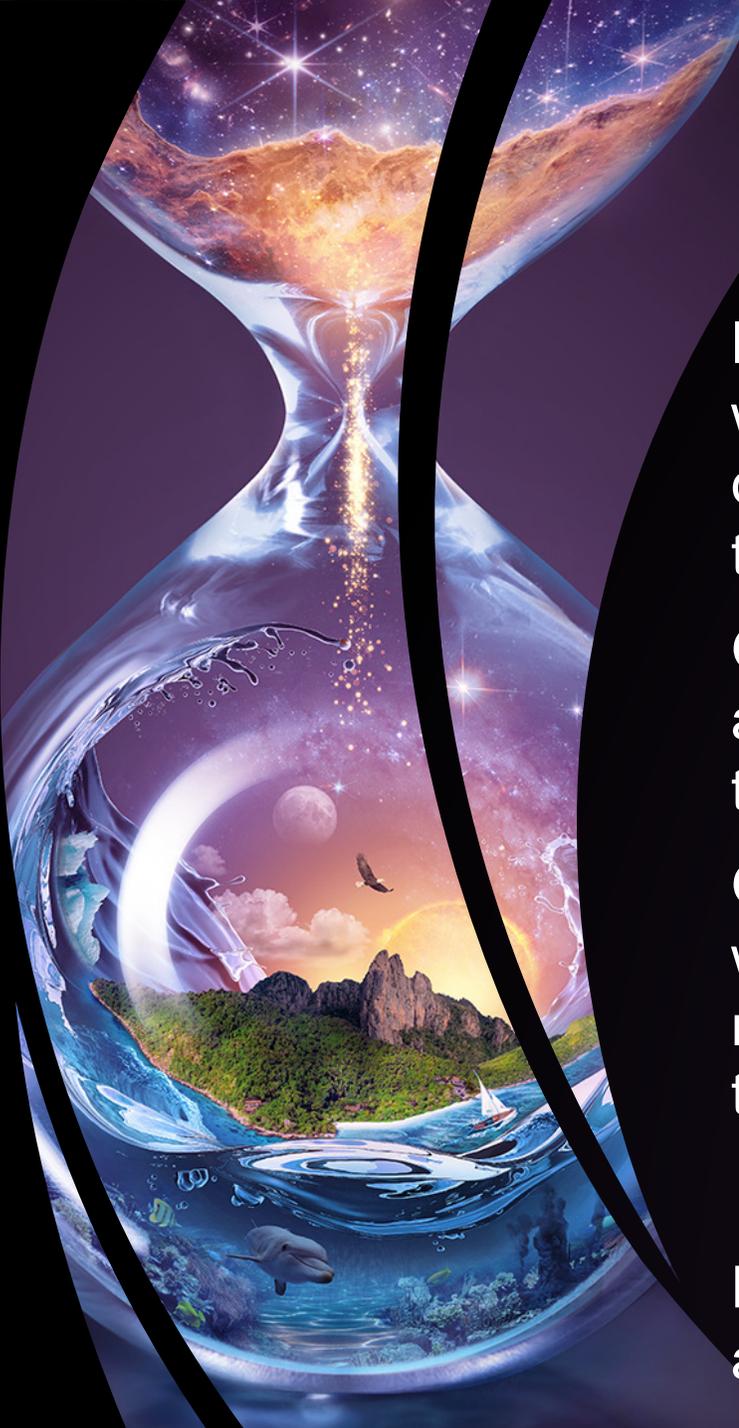
Verbal feedback from both proposers and reviewers was very positive!

Program officers are positive as well

But...

Michael New sent questions to the DDAP proposers and to the AORs: 17/36 PIs responded, as did 7/26 AORs

- 65% of PIs said that they either had to or chose to do a full budget
- 29% of PIs said that they did not have to do a full budget
- All of the AORs said a full budget was required



Just-in-time Budgets: Thoughts

Based on the data, it appears that PIs save little time overall with just-in-time budgets. But, the data set is small, and it's definitely too small to see correlations with different institutional types.

Opinion #1: This is a way to reduce a barrier to participation, and while there is no evidence that it does **good**, neither is there evidence that it does **harm**.

Opinion #2: PSD can offer ways to make proposing simpler, but we can't make institutions take advantage of it. NASA can't make institutions take advantage, but PIs can push for it within their organization.

DDAP is in year 2 of this experiment (proposals are in review), and we should continue tracking data.

Planetary Aeolian Laboratory (PAL)

Haley Cummings, NASA Ames

KEVION

Cathy Dukes, U. Va.

Facility for Astromaterials Research at JSC

Justin Filiberto, NASA JSC

Timothy Hahn, NASA JSC

Scanning Electron Microscope Facility

Cyrus Goodrich, USRA/LPI

UTCT

Romy Hanna, UT Austin

GSECARS Synchrotron Facility

Tony Lanzirotti, U. Chicago

RELAB

Ralph Milliken, Brown

Planetary Cloud Aerosol Research Facility

Michael Pauken, JPL

Kuiper Materials Imaging and

Characterization Facility

Tom Zega, U. Az

Planetary Science Enabling Facilities (C.17)

- Intention is to solicit for PSEF on the even numbered ROSES years.
- In total, 25 Step-2 PSEF proposals were received and 10 facilities were selected.
- Selections are posted on [NSPIRES](#) under this program element.
- Total costs of new selections for the 4-year cycle are expected to be ~\$22M.
- Information regarding each facility in the form of a quad chart can be found here: <https://science.nasa.gov/researchers/planetary-science-enabling-facilities>.
- We know there have been a lot of changes to facilities and instrument requests over the recent years. A Frequently Asked Questions document is located on the facilities website and available directly here: https://science.nasa.gov/science-pink/s3fs-public/atoms/files/Facilities%20FAQ_Updated%20January%202023.pdf

Reminders on ROSES 23

- No Due Date (NoDD) programs (open now!)
 - <https://science.nasa.gov/researchers/NoDD>
- Remember rules on duplicate proposals (see C.1)
- Compliance: We are checking and strictly enforcing compliance rules. Non-compliant proposals may be returned without review or be declined on this basis *regardless of intrinsic merit score from the panel.*
 - Please remember, compliance rules exist in part to ensure readability and accessibility.
 - New in ROSES-23: Note that **all** critical team members (Co-Is) must be registered in NSPIRES and confirm commitment there.
 - Compliance checking scripts are now available to all at: <https://github.com/nasa/ROSES-Compliance-Checking-Tools/blob/main/README.md>
 - The scripts come with no guarantee!



Reminders on ROSES 23

- SPD-41a applies to all ROSES23 calls
 - Data Management Plans are now Open Science and Data Management Plans (OSDMP).
 - Planetary Data Ecosystem Update (next slide)
- Expanded list of Facilities are now included!
 - <https://science.nasa.gov/researchers/planetary-science-enabling-facilities>
 - This includes all PSEF facilities and some additional facilities that are or have been funded by PSD.
- (Small) expansion of the use of triage beyond NoDD programs (more on this in a few slides)
- All programs are moving to shared inboxes
 - (e.g. HQ-LARS@mail.nasa.gov)
- No data to report yet

Planetary Data Ecosystem Updates

Planetary Data Officer at Ames expected to be on-boarded in early summer 2023

Coming soon! PSD is finalizing its Division-level policy with expected release by the end of March 2023. Policy will provide additional guidance to planetary science community.

- PSD adds physical samples to its definition of “scientific information” therefore making it covered by the policy

”T” restored to PDART in ROSES 2023

- Includes information about long-term funding for maintenance of tools
- Encourages small scope projects
- Does not include workshops, but encourages submissions to TWSC

Other ROSES solicitations of relevance:

F.2 Topical Workshops, Symposia, and Conferences (TWSC), which can be used to support opportunities for trainings on use of planetary data and software.

F.7 Support for Open-Source Tools, Frameworks, and Libraries, which supports improvement and sustainment of high-value, open-source tools, frameworks, and libraries that have made significant impacts to the SMD science.

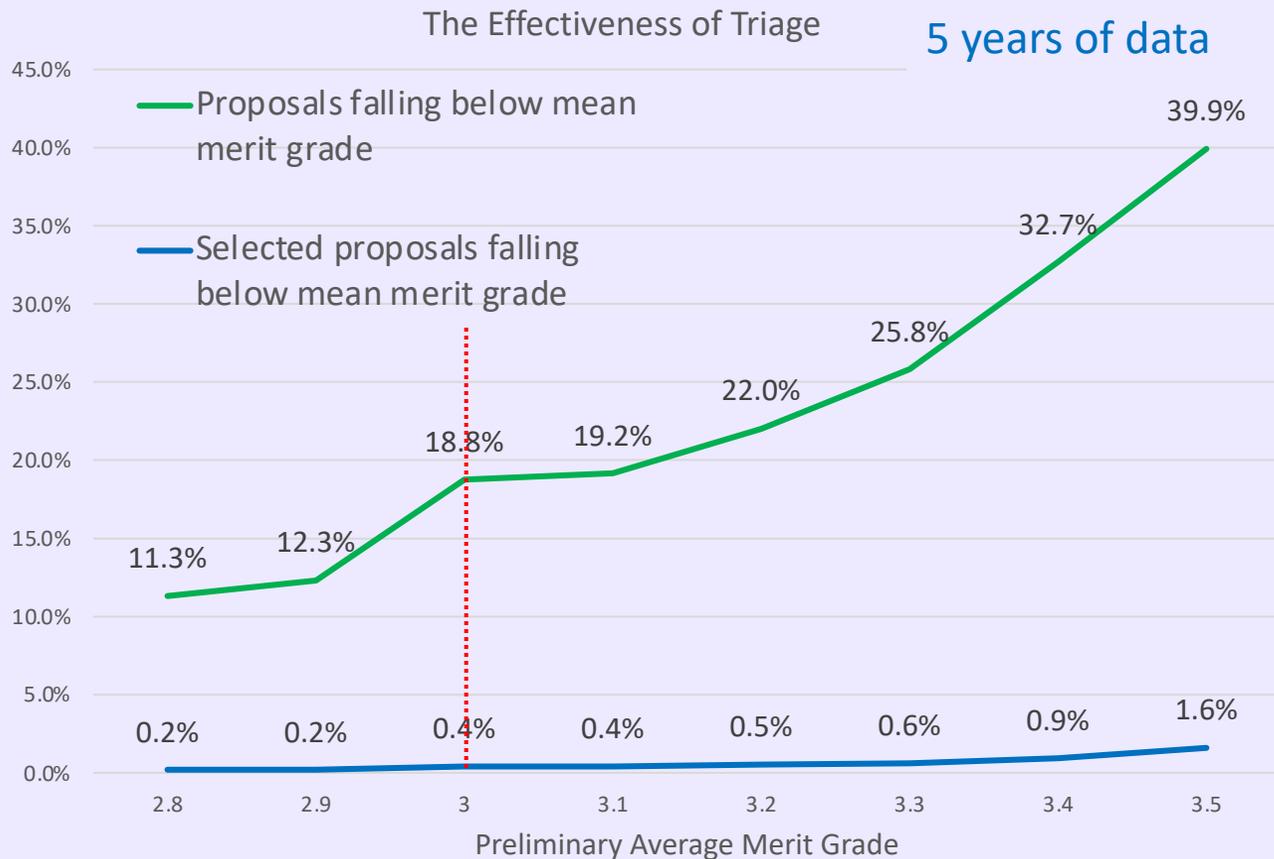
F.8 Supplemental Open Source Software Awards, which supports supplements to parent awards for the conversion of legacy software into modern code to be released under a generally accepted, open-source license.

F.15 High-Priority Open Source Science, which supports innovative open-source tools, software, frameworks, data formats, and libraries that will have a significant impact on the SMD science community.

Triage

Triage was included as part of the NoDD trial, and within NoDD has been working well

Why? An attempt to (modestly) reduce the burden on both reviewers and Program Officers (POs).



What is it?

- Proposals below the “Good” cutoff are not discussed in panel (exact cutoff can vary by program)
- Proposers get a “concatenated review” rather than a panel review
 - This consists of the individual comments from reviewers that went into scoring
 - Still reviewed by primary reviewer for clarity
 - Reviewed by PO

Reviews: Community Support

- The peer review process depends on community participation
- Virtual reviews are the norm and shall remain so for now
 - Some pros and cons of virtual review (partial list)

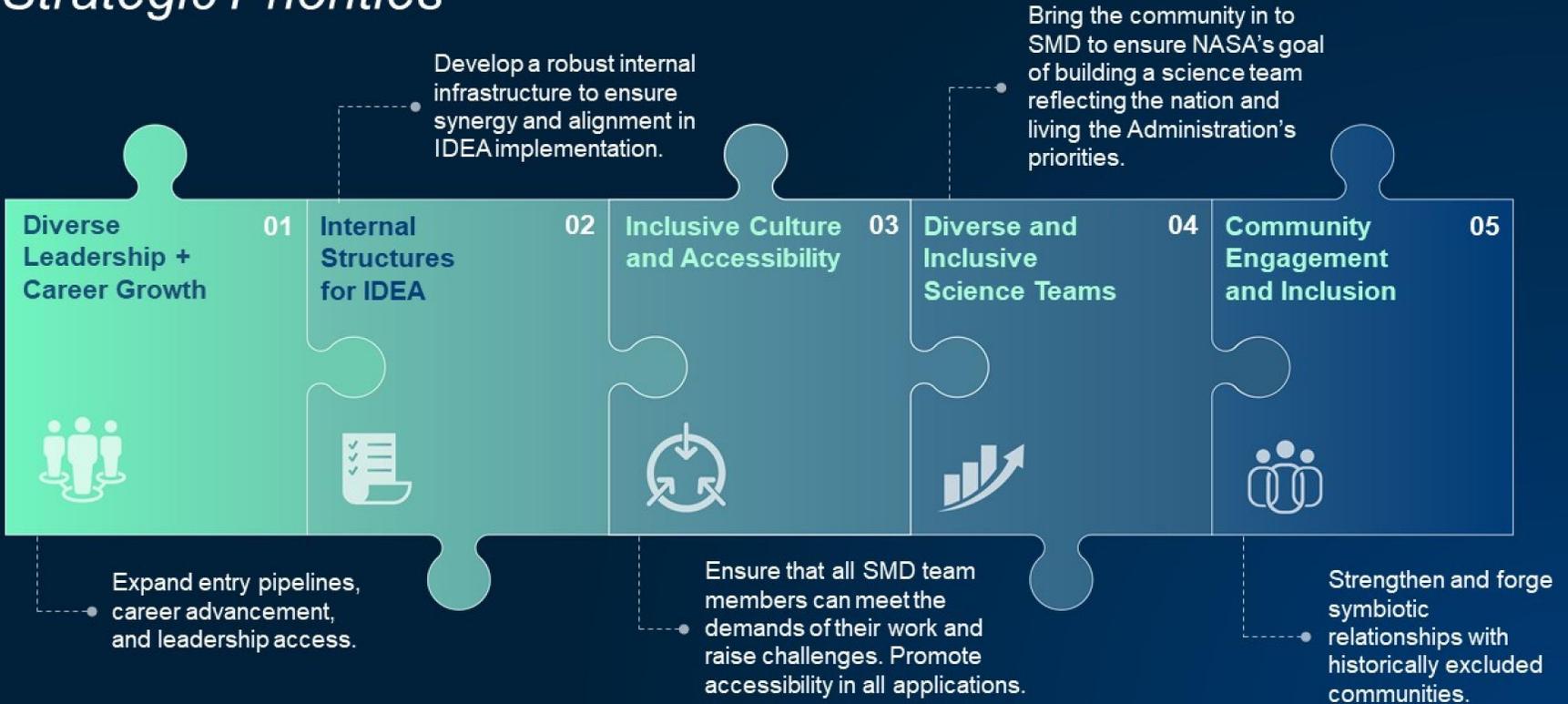
Pro	Con
Participation in reviews is more inclusive	Loss of networking opportunities
Reduced carbon footprint	“Distractions” of normal life still present
Reduced Cost to NASA	More work for POs (maybe not more time?)
Reduced time for reviewers	

- There is no consensus on whether virtual or in-person is better
- But we can mitigate some of cons, e.g. “Distractions”
 - Reviewers need to be open and honest about time commitments with their PO and their group chief.

IDEA in SMD

New webpage with information and resources:
<https://science.nasa.gov/about-us/idea>

SMD Inclusion, Diversity, Equity, Accessibility (IDEA) Strategic Priorities

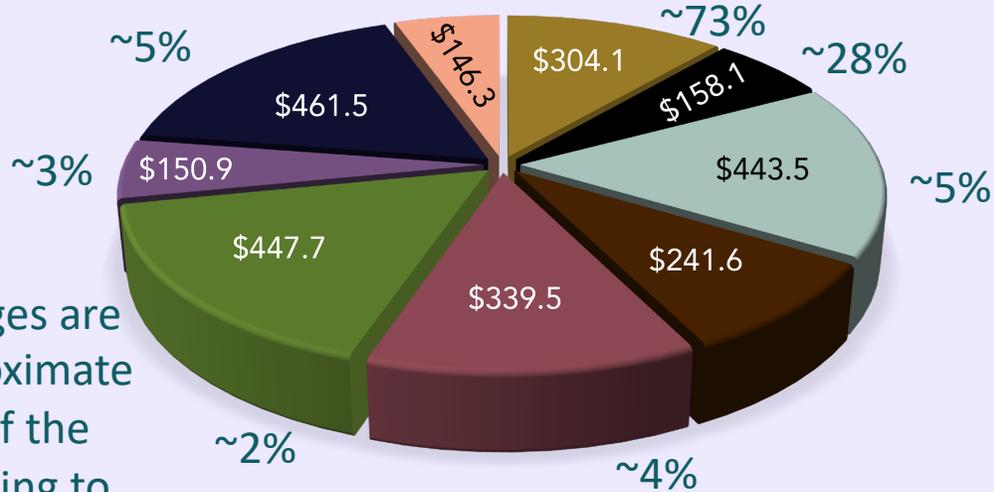


PSD Budget Breakdown

Reminder!

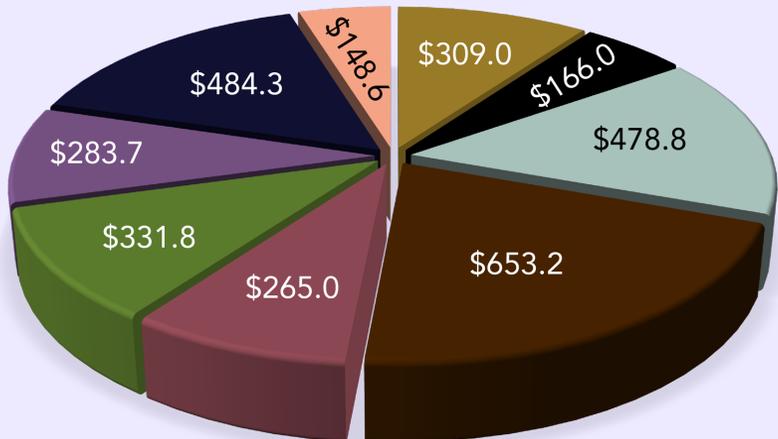
The R&A Program includes contributions from many different portfolios

FY21 Actual (Total: \$2,693.2M)



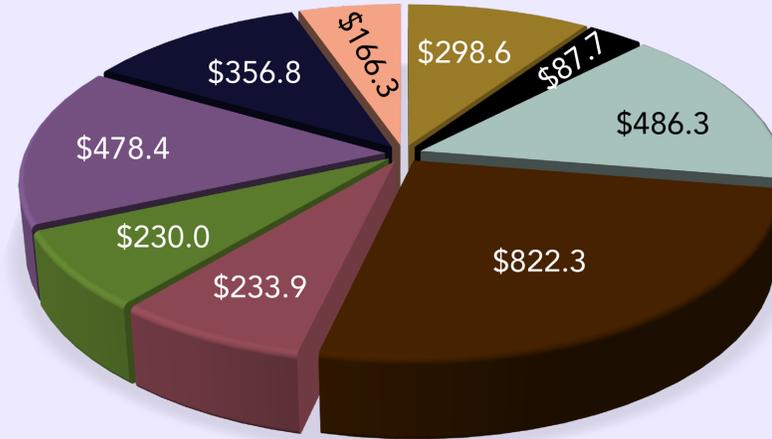
Percentages are the approximate fraction of the wedge going to research

FY22 Operating Plan* (Total: \$3,120.4M)



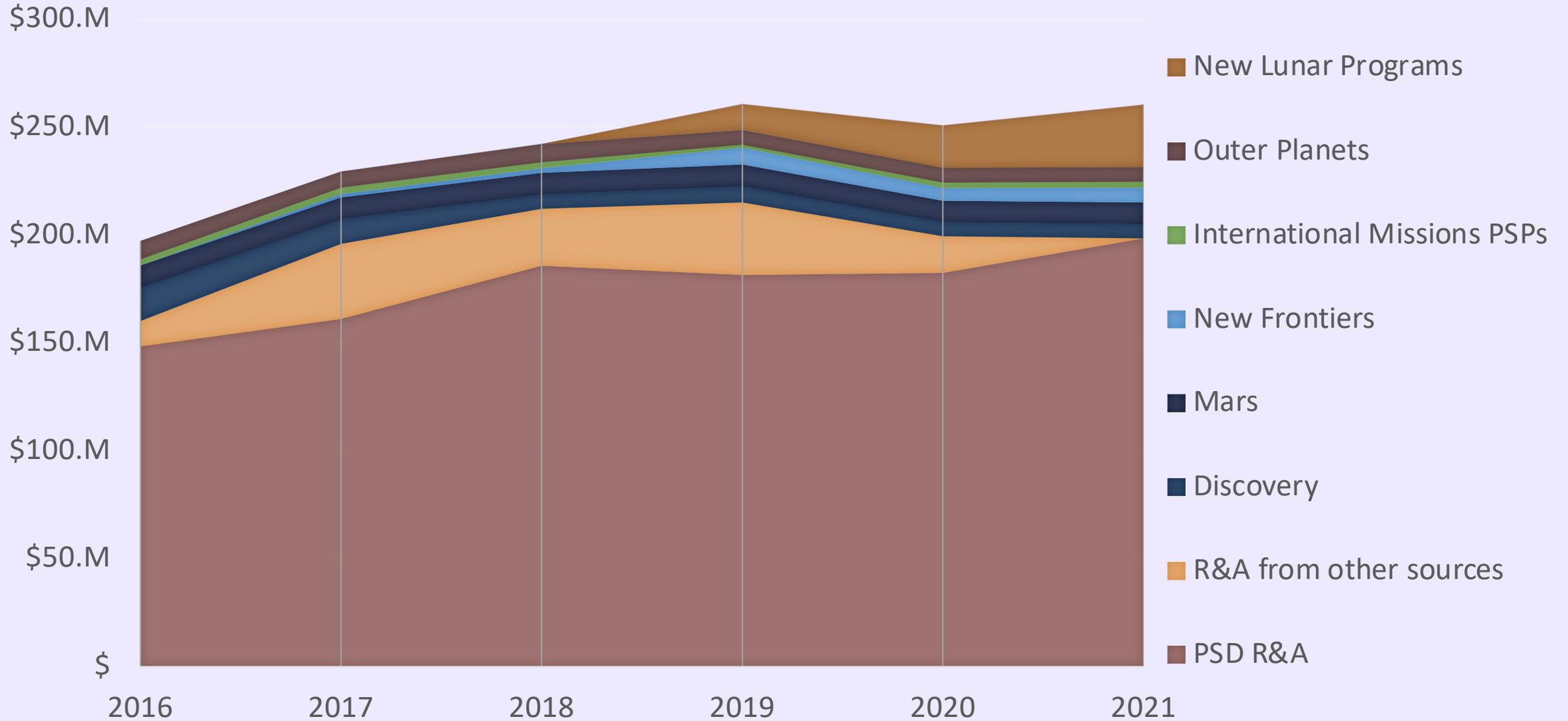
The Planetary R&A Portfolio lives here

FY23 Request (Total: \$3,160.2M)



- Planetary Science Research/Other
- Planetary Defense
- Lunar Discovery and Exploration
- Mars Sample Return
- Mars Exploration
- Discovery
- New Frontiers
- Outer Planets & Ocean Worlds
- Radioisotope Power

RESEARCH BUDGETS OVER TIME





People

Changes in PSD's R&A Team:

- Departures:
 - Doris Daou on detail to Astrophysics Division (APD) for a year
 - Lucas Paganini hired as a Program Executive by APD
 - Melissa Morris hired as a Program Executive by PSD
 - Adriana Ocampo retired
 - Aaron Burton finished his detail
 - Catherine Walker finished her NPMP Fellowship
- Arrivals
 - Nick Lang (IPA)
 - KC Hansen
 - Curtis Williams
 - David Smith (transferred from Ames)
 - Shahid Aslam started a 50% time detail (from GSFC)
 - Joseluis Chavez started a 50% time detail (from KSC)

THANK YOU!



Divider Slide

